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Abstract

The invention concerns a solid phase surface structure and a process for preparing such a structure. The surface structure comprises functional groups on the surface of a substrate. The species of a reactant fed in gas or liquid phase is bound at least temporarily to said groups due to the interaction between said species and said functional group during a chemical reaction. According to the invention essentially all of the functional groups are attached to the substrate via a bridging group bound to the surface atoms of the substrate, the surface binding sites being so far from the surface of the substrate that the surface of the substrate does not have any significant influence on the interaction between the surface binding sites and the reactant species. The functionalized surface structures can be provided by reacting an inorganic oxide support with a compound of formula (I) $R<1>AX<1>$ wherein A is silicon, tin, germanium or carbon, R<1> is a hydrocarbon group and X<1> is a functional group. The reaction between the support and the compound of formula I is carried out under surface bond selective conditions and the reaction is continued until essentially all of the hydroxyl groups of the inorganic surface have reacted under surface bond selective conditions. By means of the invention functionalized surfaces are provided which can be used for chromatographic applications and as catalyst supports.